

# Contents

Contributing Authors	ix
Preface	xv

## PART I INFRASTRUCTURE PROTECTION

1	
Protecting the Transportation Sector from the Negative Impacts of Climate Change	3
<i>Georgia Lykou, George Stergiopoulos, Antonios Papachrysanthou and Dimitris Gritzalis</i>	
2	
Evaluation of Additive and Subtractive Manufacturing from the Security Perspective	23
<i>Mark Yampolskiy, Wayne King, Gregory Pope, Sofia Belikovetsky and Yuval Elovici</i>	
3	
Detecting Data Manipulation Attacks on the Substation Interlocking Function Using Direct Power Feedback	45
<i>Eniye Tebekaemi, Edward Colbert and Duminda Wijesekera</i>	
4	
Network Forensic Analysis of Electrical Substation Automation Traffic	63
<i>Megan Leierzapf and Julian Rrushi</i>	

## PART II INFRASTRUCTURE MODELING AND SIMULATION

5	
Multiple Security Domain Model of a Vehicle in an Automated Platoon	81
<i>Uday Kanteti and Bruce McMillin</i>	

6

Distributed Data Fusion for Situational Awareness in Critical Infrastructures with Link Failures 99

*Antonio Di Pietro, Stefano Panzieri and Andrea Gasparri*

7

Exploiting Web Ontologies for Automated Critical Infrastructure Data Retrieval 119

*Luca Galbusera and Georgios Giannopoulos*

### PART III INDUSTRIAL CONTROL SYSTEM SECURITY

8

Enforcing End-to-End Security in SCADA Systems via Application-Level Cryptography 139

*Adrian-Vasile Duka, Bela Genge, Piroška Haller and Bogdan Crainicu*

9

Software Defined Response and Network Reconfiguration for Industrial Control Systems 157

*Hunor Sandor, Bela Genge, Piroška Haller and Flavius Graur*

10

Threat Analysis of an Elevator Control System 175

*Raymond Chan and Kam-Pui Chow*

11

Generating Honeypot Traffic for Industrial Control Systems 193

*Htein Lin, Stephen Dunlap, Mason Rice and Barry Mullins*

12

Challenges to Automating Security Configuration Checklists in Manufacturing Environments 225

*Joshua Lubell and Timothy Zimmerman*

13

Categorization of Cyber Training Environments for Industrial Control Systems 243

*Evan Plumley, Mason Rice, Stephen Dunlap and John Pecarina*

14

Multi-Controller Exercise Environments for Training Industrial Control System First Responders 273

*Joseph Daoud, Mason Rice, Stephen Dunlap and John Pecarina*

PART IV INTERNET OF THINGS SECURITY

15

Defending Building Automation Systems Using Decoy Networks 297  
*Caleb Mays, Mason Rice, Benjamin Ramsey, John Pecarina and  
Barry Mullins*

16

Securing Bluetooth Low Energy Locks from Unauthorized Access 319  
and Surveillance  
*Anthony Rose, Jason Bindewald, Benjamin Ramsey, Mason Rice  
and Barry Mullins*

Critical Infrastructure Protection XI  
11th IFIP WG 11.10 International Conference, ICCIP  
2017, Arlington, VA, USA, March 13-15, 2017, Revised  
Selected Papers  
Rice, M.; Shenoi, S. (Eds.)  
2017, XVI, 338 p. 116 illus., Hardcover  
ISBN: 978-3-319-70394-7